

PROGRESS
OF
MEDICAL SCIENCE

MEDICINE

UNDER THE CHARGE OF

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Gastric Analysis.—BENTON and TIDY (*Quart. Jour. Med.*, 1911, iv, 449) studied 331 test meals of toast and tea at the London Hospital. In cases of gastric carcinoma Günsberg's reagent gave a negative test and the total acidity was highest when the lesion was at the pyloric end. With a low acidity, it was either in the cardia or in the body of the stomach and inoperable. Taken in connection with the length of history given by the patient, the gastric analysis is of some importance. A patient with carcinoma and a gastric history of less than two years almost certainly has no free HCl in the test meal. One with a gastric history of more than four years and no free HCl almost certainly has no carcinoma. In the rare cases of carcinoma grafted on an old ulcer there was generally presence of free HCl and the total acidity was normal or above. Thus, the picture resembles the ulcer type. In the cases of ulcer it was observed that marked anemia may lead to a diminution of the free HCl. Especially is this the case after severe hemorrhage. And it is noteworthy that free hemorrhage may lead to an amelioration of the symptoms. Dyspeptic cases with low acidity early lost their symptoms on the administration of acids. This furnished a good clinical differentiation from carcinoma, where the acidity is usually unchanged and the symptoms unmodified. In dealing with free acidity they found Günsberg's reagent of much greater importance than the dimethylamidoazobenzene. The methods generally in use are approximately accurate when the free acidity is normal or above normal, and not so accurate when it is below, while the phosphates which are secreted into the stomach when the mucous membrane fails

to elaborate HCl detract from the accuracy of ordinary methods. This inaccuracy is common to all methods. Therefore, the simple Günsberg reaction with estimation of dimethyl acidity and total acidity by phenolphthalein are quite sufficient.

Cultivation of Treponema Pallidum.—While several investigators have produced a spirochete morphologically the pallidum, this parasite has never yet been grown to reproduce syphilitic lesions. NOGUCHI (*Jour. Amer. Med. Assoc.*, 1911, lvii, 102) using the testicular tissue of rabbits, grew the treponema upon serum water to which sterile rabbit kidney or liver had been added. At first strict anaërobic conditions are necessary. As the cultures contained bacteria too, Noguchi was able to effect purification by letting them grow through a Berkefeld filter, which held back the bacteria. Later they may be recovered from the bacteria from stab cultures in solid media. Their pathogenicity for rabbits has been proved, and the same lesions are found as in those set up by inoculation with luetic material. This establishes the fact that the treponema is the cause of the lesions in man.

Effects upon Complement Fixation Test of Arsenobenzol.—CRAIG (*Arch. Int. Med.*, 1911, viii, 395) has studied 225 cases out of over 700 at his disposal. The histories of these selected men were full as to date of infection, stage of the disease, and immediate results of treatment. The best results of treatment are with cases in the primary stage of the disease—the worst with tertiary manifestations—but the complement fixation test disappears more rapidly in the tertiary stage cases. The explanation of this is that a positive test means the presence of living spirochetes, and whereas in the primary stage there were a large number of spirochetes in the patient, in almost all tertiary cases the patient had had courses of mercury and the organisms were readily killed off. This observation of the rapid disappearance of the complement fixation test in the tertiary stage coincides with the clinical observations where one observes rapid healing of tertiaries following salvarsan. In most cases the reaction disappeared in the second, third, and fourth weeks of treatment. The prognosis is most favorable with those cases showing a weak fixation, and least favorable with the cases showing a strong (100 per cent.) fixation. They tried very few cases with the intravenous method. Alkaline suspensions were better than neutral when used intramuscularly, and the reaction disappeared faster after intravenous than intramuscular injection. While the time of disappearance of the reaction was little affected, better results were obtained in those cases who had mercurial treatment. One or two injections of "606" seemed more efficacious than two years of mercury. The reaction furnishes the only test of whether lues is cured or not, and one must wait a reasonable time to get the reaction.

The Physiology of Passive Movements.—VEIEL and ZAHN (*Munch. med. Woch.*, 1911, lviii, 1759). While passive movement has been used for some time in the therapy of cardiac disease, there has been as yet no accurate observation of the exact effects upon the system.

Recently Veiel and Zahn have been able to conduct such experiments in Romberg's clinic with Büdingen's apparatus. This consists of an electrically driven machine, by means of which the legs of patients can be put through the motions of ordinary walking and hill climbing. Two arms are operated by the mechanism, to each of which a leg is fastened. The speed and length of stride can be altered at will. They found that these passive movements produced a greater flow of blood in the legs, the flow in the arms being less in compensation. The striking force of the heart is greater. The circulation is influenced in the same way, but in a milder degree than in active movements. There is no general rise in blood pressure as is seen in active movements, and the heart acceleration is absent. The exercises are particularly useful in bedridden patients, preventing marantic thrombi because of blood stasis. They are particularly indicated in cases of mild or medium grades of cardiac insufficiency, where it is essential to improve the peripheral circulation, and at the same time give mild exercise to the heart. The exercises are of the same sphere of usefulness as CO₂ baths and massage.

The Excretion of Uric Acid by the Kidney.—FRANK and BAUCH (*Berlin, klin. Woch.*, 1911, xlviii, 1463) investigated clinically the effect of atophon (2 phenylechinolin, 4 carbon acid, supposed to be a remedy for gout) on the excretion of uric acid. The patients were on purin free diet and were of the gouty diatheses. Uric acid given intravenously was always followed by a more considerable output of uric acid if atophon had also been administered. It is very probable that atophon changed over the uric acid into an easily soluble component. From their observations they conclude that the teaching of an interrupted or more difficult uric acid excretion is not far wrong as a cause of gout. They feel that Brugsch and Schillenhelm's hypothesis, that the uricolytic ferments are at fault, is wrong, because when one can recover almost quantitatively uric acid introduced intravenously, there would not be time for these ferments to work. It is more probable that gout depends on a difficult excretion of uric acid by the kidneys. But it is improbable that this is part and parcel of either an anatomical function or a renal insufficiency. It is probable that the difficulty in excretion depends on a definite decrease in individual cell power, some cells being especially reserved for the excretion of each urinary component. Most, but not all of the uric acid is excreted by the tubuli contorti. As these cells are damaged this selective action disappears and the acid is excreted from other parts of the kidney. Atophon has seemed the key to raise the damaged cells to their old stage of usefulness.

Salvarsan in Late Lues of the Nervous System.—ASSMAN (*Deut. med. Woch.*, 1911, xxxvii, 1603) has investigated 8 cases of general paralysis with 6 of tabes dorsalis and several of syphilitic nervous system diseases. The "606" was given in various ways, sometimes intramuscularly, but generally intravenously, in small, repeated doses. In six weeks' observation on paralysis of the insane there was a general improvement of the condition either observable clinically or by the